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EXAMINER	
CHRISS, ANDREW W	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,390	ZININ, ALEXEY D.	
	Examiner	Art Unit	
	Andrew Chriss	2472	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 11, 2009 has been entered.

Response to Amendment

2. Applicant's amendment, filed December 11, 2009, has been entered and carefully considered. Claims 1 and 20 are amended, and Claims 1-38 are currently pending.

3. In light of Applicant's amendment to Claims 1 and 20, the outstanding rejections of Claims 1-38 under 35 U.S.C. 103(a) are withdrawn.

Claim Objections

4. **Claim 20** is objected to because of the following informalities: Examiner recommends amending the claim language in the preamble to more clearly tie the claimed "apparatus" to the claimed "network element." For example, the preamble of Claim 20 could read "An apparatus comprising a network element for communicating Layer-3 control information in a communications network". Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 1, 2, 4, 17, 20, 21, 23, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan (United States Patent Application Publication US 2003/0112755 A1) in view of Oguchi et al (United States Patent Application Publication US 2002/0067725 A1), hereinafter Oguchi.

Regarding Claim 1, McDysan discloses marking packets carrying Layer-3 control information (paragraphs 0037 and 0042, wherein packets are marked with a differentiated services code point (DSCP) value). Examiner notes that DSCP is utilized in Internet Protocol (IP) (see paragraph 0010 of McDysan, which states "Diffserv enables an ingress boundary router to provide the QoS to aggregated flows simply by examining and/or marking each IP packet's header"), which is known in the art as an implementation of "Layer-3" in the OSI 7-layer Interconnect Model (i.e., the network layer). While McDysan discloses using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and

0047) and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header). Examiner notes that point-to-point protocol (PPP) and Ethernet are known in the art as an implementation of "Layer 2" of the OSI 7-layer Interconnect Model (i.e., the data link layer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 2, McDysan discloses marking the packets using a unique protocol identifier (paragraphs 0037 and 0042, wherein packets are marked with a three bit differentiated services code point (DSCP) value (e.g., 000, 010, and 101).

Regarding Claim 4, McDysan discloses applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker).

Regarding Claim 17, while McDysan marking a packet using a DSCP value (paragraphs 0037 and 0042), using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and 0047), and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 20, McDysan discloses an apparatus comprising a network element (Figure 5, CPE edge router 34 comprising LAN physical ports (60a-60n) and WAN physical ports 64a-64n that further comprise packet classifiers 80 (LAN) and 100 (WAN)) that marks packets carrying Layer-3 control information (paragraphs 0037 and 0042, wherein packets are marked with a differentiated services code point (DSCP) value). Examiner notes that DSCP is utilized in Internet Protocol (IP) (see paragraph 0010 of McDysan, which states "Diffserv enables an ingress boundary router to provide the QoS to aggregated flows simply by examining and/or marking each IP packet's header"), which is known in the art as an implementation of "Layer-3" in the OSI 7-layer Interconnect Model (i.e., the network layer). While McDysan

discloses using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and 0047) and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header). Examiner notes that point-to-point protocol (PPP) and Ethernet are known in the art as an implementation of "Layer 2" of the OSI 7-layer Interconnect Model (i.e., the data link layer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 21, McDysan discloses marking the packets using a unique protocol identifier (paragraphs 0037 and 0042, wherein packets are marked with a three bit differentiated services code point (DSCP) value (e.g., 000, 010, and 101).

Regarding Claim 23, McDysan discloses applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker).

Regarding Claim 36, while McDysan marking a packet using a DSCP value (paragraphs 0037 and 0042), using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and 0047), and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

8. **Claims 3 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 1 and 20 above, and further in view of Nakamichi et al (United States Patent Application Publication US 2002/0085498 A1), hereinafter Nakamichi. The combination of McDysan and Oguchi discloses all of the limitations of Claims 1 and 20, as described above. However, the references do not expressly disclose marking the packets using a link-local MPLS label. In the same field of endeavor, Nakamichi discloses using a "link state type" field in a link state advertisement (LSA) in an MPLS network. Specifically, Nakamichi discloses a value for said field that denotes "link-local," indicating that the flooding scope is within a local (sub)network (paragraphs 0065 and 0066). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to combine the link state advertisement disclosed in Nakamichi with the marker/policer disclosed in McDysan, as modified above, in order to allow a node in a communications network to collect traffic information and perform load sharing depending on traffic conditions.

9. **Claims 5-12 and 24-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 4 and 23 above, and further in view of Yu et al (United States Patent Application Publication US 2004/0010583 A1), hereinafter Yu.

Regarding Claims 5 and 24, the combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not disclose applying interface groups to packet communications within a particular interface group. In the same field of endeavor, Yu discloses packet communications within a particular interface group (Figure 1, interface group defined between interfaces 'a' and 'd' within network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 6 and 25, Yu further discloses interface groups assigned to backbone interfaces (Figure 4, static tunnel through Internet between network device A and network device B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 7 and 26, Yu further discloses interface groups assigned to interfaces with customer-specific interface groups (Figure 4, interface 'a' between network device A and Host PC). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 8 and 27, Yu further discloses applying interface groups to peer interfaces (Figure 4, static tunnel between network device A and network device D). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 9 and 28, Yu further discloses applying interface groups to packet communications between interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 10 and 29, Yu further discloses applying interface groups to packet communications between backbone and customer-specific interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would

have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 11 and 30, Yu further discloses applying interface groups to packet communications between customer-specific and peer interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 12 and 31, Yu further discloses applying interface groups to packet communications between backbone and peer interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

10. **Claims 13 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Holden et al (United States Patent 5,802,178), hereinafter Holden. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the

aforementioned references do not expressly disclose applying interface groups to communication of ICMP packets. In the same field of endeavor, Holden discloses a secure network interface unit (SNIU) that marks the protocol and type fields to indicate an ICMP Echo Reply, signs the packet, and sends through an interface (column 20, line 66 - column 21, line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ICMP marking disclosed in Holden with the interface group determination disclosed in McDysan, as modified above, in order to provide security assurances for computers operating in secure and non-secure networks (see column 2, lines 56-59 of Holden).

11. **Claims 14 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Pan et al (United States Patent 7,336,615), hereinafter Pan. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not expressly disclose applying interface groups to communication of ping packets. In the same field of endeavor, Pan discloses assigning predetermined port numbers to LSP ping messages (column 14, lines 48-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine ping message port assignment disclosed in Pan with the marker/policer disclosed in McDysan, as modified above, in order to automatically detect the status of a label switched path.

12. **Claims 15 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Fotedar (United States Patent Application Publication US 2004/0085965 A1). The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above.

However, the aforementioned references do not expressly disclose applying interface groups to communication of traceroute packets. In the same field of endeavor, Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface (paragraph 0011). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the traceroute packet assignment disclosed in Fotedar with the marker/policer disclosed in McDysan, as modified above, in order to enable direct communications between a virtual router and a virtual address, without having to know a physical address.

13. **Claims 16 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 4 and 23 above, and further in view of Tuomenoksa et al (United States Patent Application Publication US 2002/0023210 A1), hereinafter Tuomenoksa. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the references do not expressly applying interface groups to communication of packet from Network Operations Center (NOC) hosts. In the same field of endeavor, Tuomenoksa discloses setting up a tunnel interface with a NOC (paragraph 0136) and communicating packets, including control information, with the NOC via the tunnel (paragraphs 0141-0143). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the tunneling disclosed in Tuomenoksa with the interface grouping disclosed in McDysan, as modified above, in order to establish virtual private networks using nonproprietary hardware on local and wide area networks (see paragraphs 0016 and 0017 of Tuomenoksa).

14. **Claims 18 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330). The combination of McDysan and Oguchi discloses all of the limitations of Claims 1 and 20, as described above. However, the references do not expressly disclose receiving unmarked control packets using rate-limited queues. In the same field of endeavor, Johansson discloses an ATM switch receiving packets into rate-limited queues (Figure 1, 116; Figure 4a, 410). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the rate-limited queuing disclosed in Johansson with the unmarked control packets (i.e., packets received prior to being marked) disclosed in McDysan, as modified above, in order to perform fair queuing scheduling using both buffer occupancy and input rate.

15. **Claims 19 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 1 and 20 above, and further in view of Hussey et al (United States Patent Application Publication US 2001/0049744 A1), hereinafter Hussey. The combination of McDysan and Oguchi discloses all of the limitations of Claims 1 and 20, as described above. Further, McDysan discloses receiving packets (paragraphs 0037 and 0042). However, the aforementioned references do not expressly disclose processing the received packets at a line rate. In the same field of endeavor, Hussey discloses a processor pool aggregation technique wherein a received packet data stream is capable of being processed at a line rate (paragraph 0050). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the packet processing disclosed in Hussey with the

marker/policer disclosed in McDysan, as modified above, in order to improve data processing within a data-handling device.

Response to Arguments

16. Applicant's arguments, filed December 11, 2009, with respect to rejection of Claims 20-38 under 35 U.S.C. 112, first paragraph as comprising undue breadth have been fully considered and are persuasive. The rejection of Claims 20-38 under 35 U.S.C. 112, first paragraph as comprising undue breadth has been withdrawn.

17. Applicant's arguments, filed December 11, 2009, with respect to rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, have been fully considered and are persuasive. The rejection of Claims 4-16 and 23-36 under 35 U.S.C. 112, second paragraph, has been withdrawn.

18. Applicant's arguments filed December 11, 2009 with respect to rejection of Claims 1, 2, 3, 4, 20, 21, 22, and 23 under 35 U.S.C. 103(a) have been considered but are moot in view of the new grounds of rejection.

19. Applicant's arguments, filed December 11, 2009, with respect to the rejection of claims 13 and 32 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection is made in view of the ICMP packet marking and delivery disclosed in Holden, as described above.

20. Applicant's arguments filed December 11, 2009 regarding rejection of Claims 3, 5-12, 14, 15, 18, 19, 22, 24-31, 33, 34. 37, and 38 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

Regarding Claims 3 and 22, Applicant states that the cited portions of the cited references fail to disclose or suggest "marking the packets using a link-local MPLS label." Examiner respectfully disagrees. Paragraphs 0065 and 0066 of Nakamichi expressly discloses a link-state advertisement (LSA) comprising a "link state type" which, when set to a value of "9", indicates that the LSA is "link-local." Regarding Applicant's argument that paragraph 0050 allegedly teaches away from using an opaque LSA, Examiner respectfully disagrees. Nakamichi discloses configuring a router using opaque LSAs and further describes the benefits of using an opaque LSA in paragraph 0051, which states: "In the opaque LSA, there is in particular not any provision in information that the opaque LSA can include therein, excluding a LSA header and LSR interface information to be mentioned below. In this way, the opaque LSA has a freely using region. Furthermore, in the opaque LSA, there is not either any provision what time propagated, excluding a point that flooding is used as its propagation (transmission) technique. In this way each router can propagate the opaque LSA(s) at the desirable time. Moreover, as the opaque LSA follows the OSPF, the opaque LSA can be used in the communication networks such as the Internet, etc. Accordingly, the opaque LSA which has the freely using region containing the traffic information is propagated, whereby the traffic information can be exchanged between the routers in the present communication network such as the Internet, etc." Therefore, without acquiescing to Applicant's interpretation of the translated word "peculiar" in

paragraph 0050, Nakamichi suggests the desirability of using an opaque LSA in an MPLS network.

Regarding Claims 5-12 and 24-31, Applicant states that the cited art fails to disclose or suggest "applying interface groups" to enable various results. However, the claim language "applying interface groups" is not clearly defined in the specification. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989)." Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications. Accordingly, Yu discloses assigning interfaces to communicate within and between various types of networks (see Figures 1 and 4 and paragraphs 0022 and 0025). Further regarding Claims 5 and 24, Yu discloses packet communications between interfaces 'a' and 'd' of Network Device A in Figure 1. Further regarding Claims 6 and 25, Yu discloses communications between the Network Device A and the Internet (i.e., backbone given its broadest reasonable interpretation) (Figure 4). Further regarding Claims 7 and 26, Yu discloses

communications with a Host PC (i.e., customer-specific interface group given its broadest reasonable interpretation) in Figure 4 using interface ‘a' in Network Device A. Further regarding 8 and 27, Yu discloses communications between Network Device A and Network Device B (i.e., peer devices on a LAN given its broadest reasonable interpretation) via interfaces 'a' and 'b.' Further regarding Claims 9-12 and 28-31, Yu discloses communications between the Internet (i.e., backbone given its broadest reasonable interpretation) the Host PC (i.e., customer-specific interface group given its broadest reasonable interpretation), Network Device A and Network Device B (i.e., peer devices on a LAN given its broadest reasonable interpretation) via interfaces 'a' and 'd' in Network Device A and interfaces 'b' and 'e' in Network Device B in Figure 4.

Regarding Claims 14 and 33, Applicant states that the cited portions of the cited references fail to disclose or suggest “applying interface groups to communication of ping packets” and further states that the cited portion of Pan teaches away from the claimed subject matter. Examiner respectfully disagrees. The claim language “applying interface groups” is not clearly defined in the specification. Per MPEP 2106: “USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted “in view of the specification” without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989).” Despite the claims at issue reciting alleged results of the aforementioned functionality, it

is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications. With regards to the claim limitation "applying interface groups to communication of ping packets," Pan discloses assigning predetermined port numbers to LSP ping messages (column 14, lines 48-55). Applicant's arguments regarding the combination of Pan with McDysan, Henderson, and Yu are moot in view of the new grounds of rejection.

Regarding Claims 15 and 34, Applicant states that the cited portions of the cited references fail to disclose or suggest "applying interface groups to communication of traceroute packets" and further states that the cited portion of Potedar teaches away from the claimed subject matter. Examiner respectfully disagrees. The claim language "applying interface groups" is not clearly defined in the specification. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989)." Despite the claims at issue reciting alleged results of the aforementioned functionality, it is unclear what the step of "applying interface groups" actually comprises. In order to further prosecution, Examiner has given said claim language its broadest reasonable

interpretation in view of the specification to comprise determination of an interface for communications. With regards to the claim limitation "applying interface groups to communication of traceroute packets," Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface (paragraph 0011). Applicant's arguments regarding the combination of Fotedar with McDysan, Henderson, and Yu are moot in view of the new grounds of rejection.

Regarding Claims 18 and 37, Applicant states that the cited portions of the cited references do not disclose or suggest "receiving unmarked control packets using rate-limited queues." Examiner respectfully disagrees. Figure 4a, step 410 of Johansson "determines when a predetermined number Input RateLimit of Cells are received" (column 10, lines 45-47). As such, Johansson provides a general teaching of a rate-limited queue receiving packets. Examiner notes that the claim limitation does not require the rate-limited queue to be in an input or output device and further notes that the input and output device disclosed in Johansson represent a connection between an input and output port of a switch (column 3, lines 51-55).

Regarding Claims 19 and 38, Applicant states that the cited portions of the cited references do not disclose or suggest "processing the received packets at a line rate." Examiner respectfully disagrees. Hussey discloses a processor pool aggregation technique wherein a communication device "receives a packet data stream via the communication network…at a line rate that might otherwise overwhelm the processing capabilities of the NIC…and result in dropped packets and reduced quality of service" (paragraph 0050). The cited portion of Hussey provides a general teaching that a device receives a packet data stream at a line rate. Applicant's statement that no evidence is provided that the purported combination "would not otherwise

overwhelm the processing capabilities of the NIC…and result in dropped packets and reduced quality of service" is not material to the patentability of the claims under 35 U.S.C. 103(a). Hussey is in the same field of endeavor (i.e., data packet processing) as both McDysan and Oguchi and therefore constitutes analogous art. Further, Hussey provides a motivation on the part of one of ordinary skill in the art to combine the general teaching of line-rate processing with the teachings of McDysan and Oguchi, in that efficiency when processing data in a device and accessing data within said device needs to improved by reducing frequent access to external memory (see paragraphs 0004 through 0006 of Hussey).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is (571)272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss
Examiner
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2/11/2010

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